

**PRELIMINARY Basis of Design
Report**

☐ ACCEPTED

☒ ACCEPTED AS NOTED

☐ REVISE AND RESUBMIT



Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.

For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY Idillon

DATE 8/12/2021

WATER BASIS OF DESIGN REPORT FOR PIMA MCDOWELL SHOWROOM

Scottsdale, Arizona

23 July 2021

PREPARED FOR

Aline Architecture Concepts
7340 East Main Street, #210
Scottsdale, Arizona 85251

DEVELOPER

Tom Frenkel
7340 East Main Street, #200
Scottsdale, Arizona 85251

SITE ADDRESS

8705 East McDowell Road
Scottsdale, Arizona 85257

Comply with stipulations and address comments below within the subsequent DR case final basis of design report:

- 1) Stipulation: The private water main on the site extending east/west across the site shall be a public line and a 14ft minimum public water line easement dedicated to it. The new water line easement shall extend to all hydrants and water meters (if any) connected to the line. Access by the City to the public main, hydrants, valves, meters will not be prevented by gates/fences etc. DS&PM 6-1.419
- 2) Stipulation: The east-west water main shall remain in it's current position within the drive aisle and shall remain connected to the parcel to the west. DS&PM 6-1.419, 6-1.402
- 3) Stipulation: A new 8-inch public water main measuring approximately 230 feet shall be connected from the onsite water main located at the west side of the parcel and connect to the existing public water main in McDowell Rd. DS&PM 6-1.402 Note: If the parcel to the west develops first this shall not be required.
- 4) Stipulation: A new isolation gate valve shall be placed on the existing on-site water main on the west parcel edge. Note: If the parcel to the west develops first this shall not be required. DS&PM 6-1.409
- 5) Stipulation: If there are any known condition or functional issues with the existing private onsite water main or appurtenances these issues shall be addressed before the portion of main and appurtenances is made public and prior to permit issuance for redevelopment. This includes but is not limited to the pipeline, valves, hydrants, and connections to other mains. In addition to conditions or functional issues any unused or abandoned items associated with the private water main shall be removed at the Water Resource Department's direction. Source: Policy on taking ownership of private infrastructure.
- 6) Stipulation: Any existing onsite private fire hydrants and associated supply lines shall become public and shall be replaced at the Fire Departments' discretion. Source: Policy on taking ownership of private infrastructure.
- 7) The current site plan herein indicates a separate parcel to be created on the northeast corner of the existing parcel. No details have been provided on this development. Within the final BOD provide details and show how this parcel will be provided with domestic and fire water service.
- 8) No fire line for sprinklers or potable lines are shown connecting to the new warehouse proposed south of the existing building. Within the final BOD indicate how this building will be supplied with domestic and fire water service.
- 9) A detailed water utility plan needed to be provided within the final BOD. DS&PM 6-1.201



4450 north 12th street, #228
phoenix, arizona 85014
CYPRESS # 21.120



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INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Pima McDowell Showroom' and is located at 8705 East McDowell Road in Scottsdale, Arizona. The proposed project consists of the renovation of the existing onsite buildings and addition of a new warehouse and storage yard.

The utility provider for water facilities is the City of Scottsdale.

EXISTING CONDITIONS

Per available utility maps and as-built records, an existing 12" ACP water main is located in the Pima Road right-of-way east of the Project. The existing building is 15,000 sf and is connected to the said main for domestic service via a 2" meter. Refer to Appendix A for City of Scottsdale Water Quarter Section Map.

FIRE FLOW REQUIREMENTS

The total building area after the redevelopment will be 39,000 square feet. The building is type conservatively estimated to be VB construction. Per the International Fire Code, Table B105.1, the existing building with the new expansion requires a minimum fire flow of 5,500 GPM for a 4-hour duration. The redeveloped building will have automatic sprinklers installed resulting in an allowable 50% reduction in fire flow requirements. Required fire flow will be 2,750 GPM for a 2-hour duration. A flow test was completed on July 15th, 2021 on the existing onsite fire hydrant immediately northeast of the existing showroom building. 5,128 GPM is available at the existing fire hydrant after accounting for City of Scottsdale required PSI and Safety Factor adjustments. Refer to Appendix B for Fire Flow Results.

PROPOSED CONDITIONS

The existing 15,000 SF building is intended to be redeveloped by the new user as showroom with the addition of a new 20,000 SF warehouse and 4,000 SF storage yard. The design team intends to retain and reuse the existing 2" water service connection east of the redeveloped building. This is anticipated to provide adequate sizing and pressure to supply the intended domestic service to the building. Refer to Appendix C for Preliminary Floor Plan.

REQUIRED COMPUTATIONS

EXISTING WATER DEMAND:

Average Day Demand (Commercial/Retail): $0.00111/\text{SF} \times 15,000 \text{ SF} = 16.65 \text{ GPM}$

Peak Hour Demand: $3.5 \times 16.65 = 58.28 \text{ GPM}$

Maximum Day Demand + Fire Flow Demand: $2 \times (16.65 \text{ GPM}) + 2,750 \text{ GPM} = 2,783.3 \text{ GPM}$

PROPOSED WATER DEMAND:

Average Day Demand (Commercial/Retail): $0.00111/\text{SF} \times 39,000 \text{ SF} = 43.29 \text{ GPM}$

Peak Hour Demand: $3.5 \times 43.29 = 151.52 \text{ GPM}$

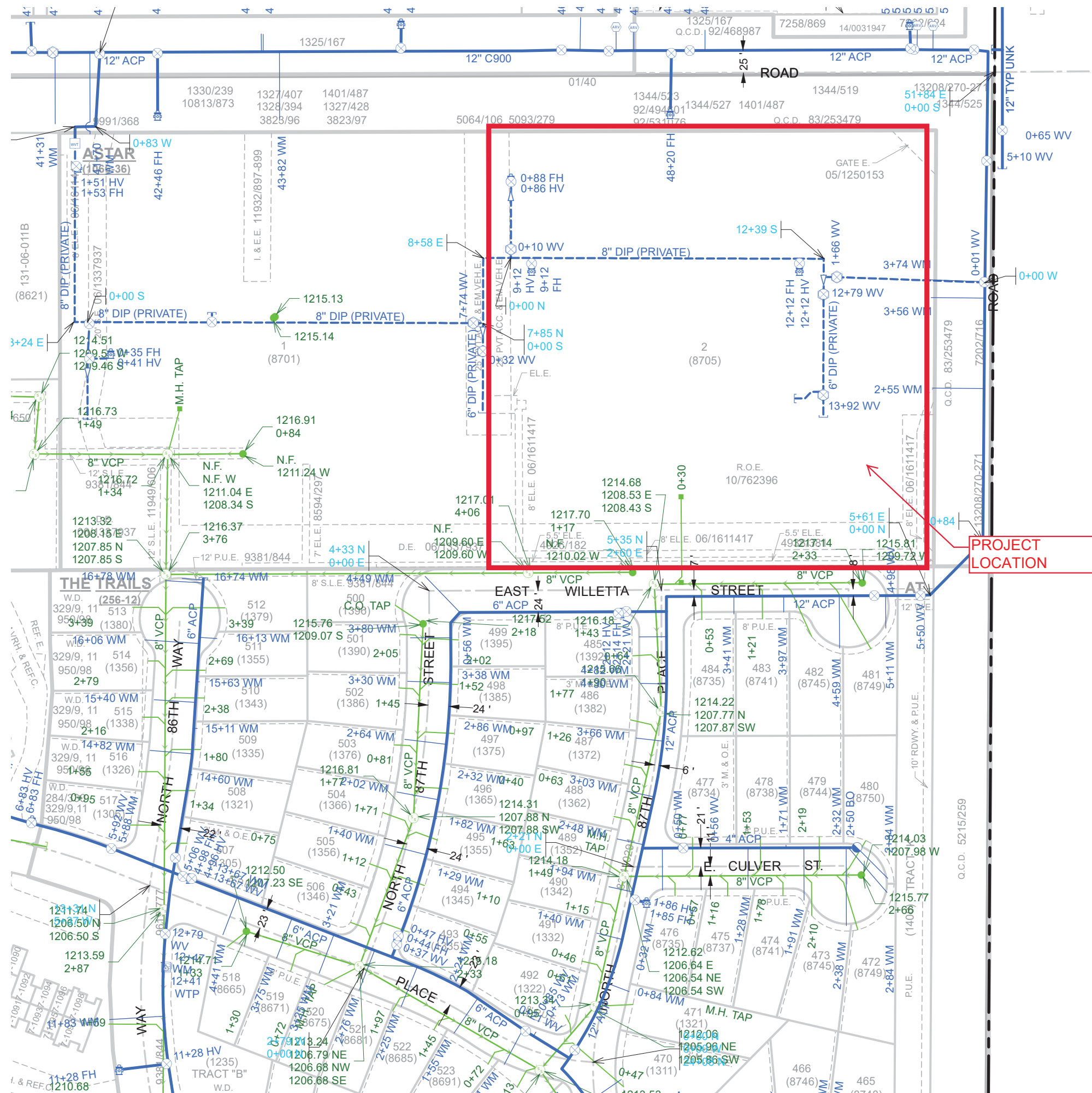
Maximum Day Demand + Fire Flow Demand: $2 \times (43.29 \text{ GPM}) + 2,750 \text{ GPM} = 2,836.58 \text{ GPM}$

Per the City of Scottsdale Design Standards & Policies Manual, Section 6-1.416 –M, minimum meter size is 1-1/2". The existing 2" water service from the east will be sufficient to support the minimum meter requirement.

CONCLUSION

CYPRESS respectfully submits this report as the Water Design Report for the proposed Pima McDowell Showroom Development. The proposed water system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
City of Scottsdale Water and Sewer Map



- GENERAL NOTES:**
- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
 - THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

- | | |
|-------------------------------------|--|
| Water Valve | |
| Non-potable Water Valve | |
| Fire Hydrant | |
| Water Blowoff | |
| Water Main Reducer | |
| Water Sample Station | |
| Water Air Release Valve | |
| Non-potable Water Air Release Valve | |
| Water Pressure Reducing Valve | |
| Water Vault | |
| Water Manhole | |
| Non-Potable Water Manhole | |
| Water Pump | |
| Water Main | |
| Non-Potable Water Main | |
| Fire Line | |
| Water Service | |
| Non-Scottsdale Water Main | |
| Sewer Manhole | |
| Sewer Cleanout | |
| Sewer Lift Station | |
| Sewer Treatment Plant | |
| Sewer Main - Gravity | |
| Sewer Main - Force | |
| Non-Scottsdale Sewer Main | |
| Sewer Service | |

Appendix B

Fire Flow Test Results

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	Pima and McDowell
Project Address:	8705 East McDowell Road, Scottsdale, Arizona, 85257
Client Project No.:	Not Provided
Arizona Flow Testing Project No.:	21381
Flow Test Permit No.:	C65833
Date and time flow test conducted:	July 15, 2021 at 7:20 AM
Data is current and reliable until:	January 15, 2022
Conducted by:	Floyd Vaughan- Arizona Flow Testing, LLC (480-250-8154)
Coordinated by:	Ray Padilla -City of Scottsdale-Inspector (602-541-0586)

Raw Test Data

Static Pressure: **88.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **78.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **24.0 PSI**
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Pollard Diffuser
(Measured in inches)

Coefficient of Diffuser 0.9

Flowing GPM: **2,105 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **5,927 GPM**

Data with 16 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **62.0 PSI**
(Measured in pounds per square inch)

Distance between hydrants: Approx.: 850-Feet

Main size: Not Provided

Flowing GPM: **2,105 GPM**

GPM @ 20 PSI: **5,128 GPM**

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

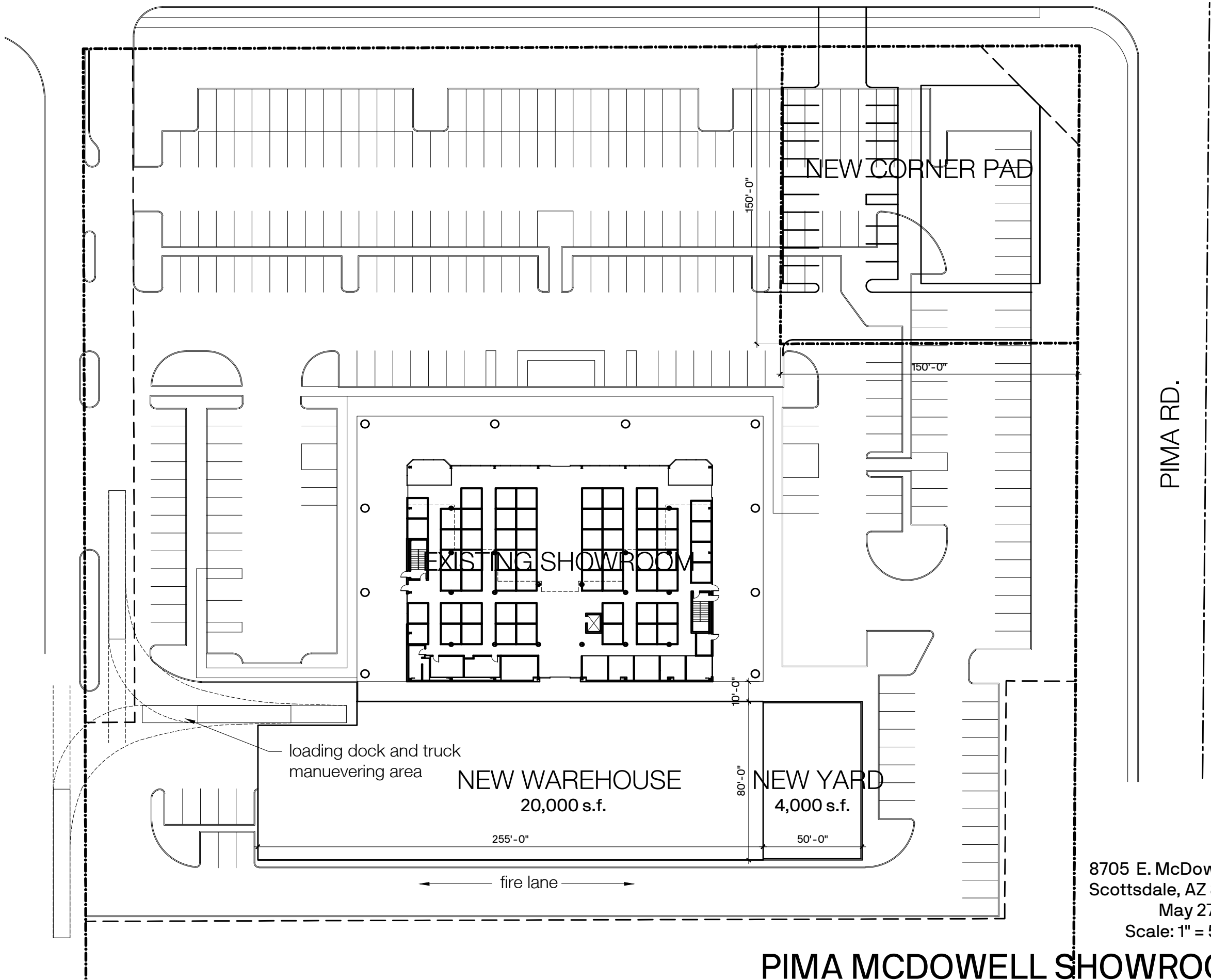
Flow Test Location

North ↑



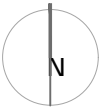
Appendix C

Preliminary Site Plan



8705 E. McDowell rd.
Scottsdale, AZ 85257
May 27, 2021
Scale: 1" = 50' - 0"

7340 EAST MAIN STREET #210
SCOTTSDALE, ARIZONA 85251
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ALINE
ARCHITECTURE CONCEPTS